

Hobbies

WEEKLY

CONTENTS

	Page
Garden Swing Seat	- 129
Craftsman's Notebook	130
Model Sailing Boat	- 131
Pick-up Playing Table	133
Plastic Paperknife	- 134
A Pin-hole Camera	- 135
Home-made Plastic Wood	- 136
Home Handyman Hints	137
Poleless Camping Tents	138
Sea-Shell Novelties	- 139
Wooden House Signs	- 140
Cotton Reel Lamp	- 141
DESIGN PATTERNS FOR A MECHANICAL RACE GAME	

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A SWING SEAT FOR THE GARDEN

WHAT can be more comfortable on a sunny afternoon than a rest in a swing chair like the one illustrated here? A few feet of timber (red deal for preference) plus canvas for the seat is all that will be wanted, with, perhaps, a yard or two of iron chain to support the swing chair in place of the rope shown in the sketch. So the whole thing should be really inexpensive, seeing what pleasure can be got out of it.

For Ordinary Use

There is an advantage, too, in making the seat as shown here because it can be unhooked from its chains and used as an ordinary garden chair just as desired.

Figs. 1 and 2 show side and front views respectively of the completed thing with dimensions of the supports and the chair. The actual canvas seating has been omitted in each diagram. The Cutting List given will be found most useful when cutting off the various lengths of wood.

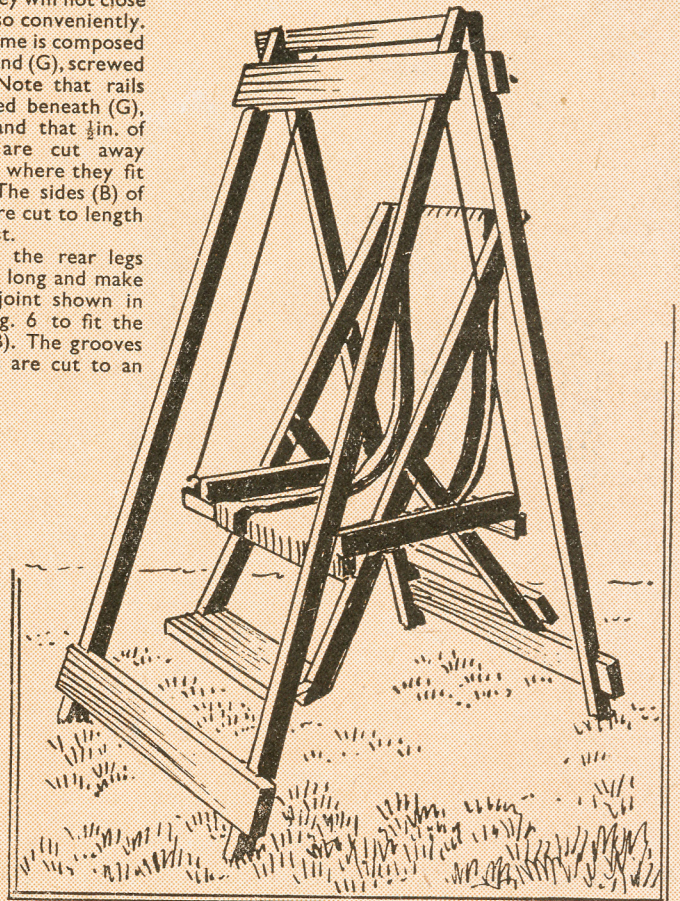
Make the trestle legs first and trim the top ends to an angle of 20 degrees. Then cut a notch on each to half the thickness of bar (A), so when the legs meet at the top the slot, formed by the notches, will admit the bar. Join the legs in pairs by the cross rails, grooving the latter as in Fig. 3. Glue and screw well together to make a strong joint. The lower cross rails should be 3ins. from the ground, and the top ones 6ins. down. Hinge the trestle legs together with backflap hinges.

Cross Rail

Now open the legs and drop in place the rail (A). This is screwed to one pair

of the legs, and not to the other or they will not close or fold up so conveniently. The seat frame is composed of rails (H) and (G), screwed together. Note that rails (H) are fixed beneath (G), see Fig. 2, and that $\frac{1}{2}$ in. of the latter are cut away underneath where they fit over (H). The sides (B) of the chair are cut to length 4ft. 6ins. first.

Now cut the rear legs (F) 2ft. 9ins. long and make the bridle joint shown in detail in Fig. 6 to fit the side rails (B). The grooves in the sides are cut to an



angle of 112 degrees. Glue and screw the joints firmly together. Join the sides of the chair by the top rail (C), and the footboard (D), the latter being 1ft. 10ins.

Now join the rear legs together by a cross rail 2ins. up from the extremities. Recess or groove them together as for the trestle legs. Fit the seat frame to the

The chair should swing about 9ins. from the ground or to any height that may be thought convenient, according to the wish of the user. Give all the woodwork two coats of either paint or good varnish, and let this thoroughly harden before attempting to fix on the canvas seating.

Seat Canvas

Rather more than a yard and a half of striped chair canvas will be required. About $\frac{3}{4}$ in. strip of the canvas is doubled over and tacked to the under edge of top chair rail (C) and from here it is brought down and tacked in a similar

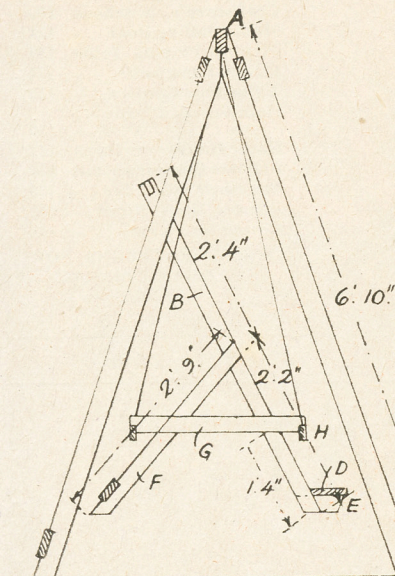


Fig. 1—End view with lettered parts

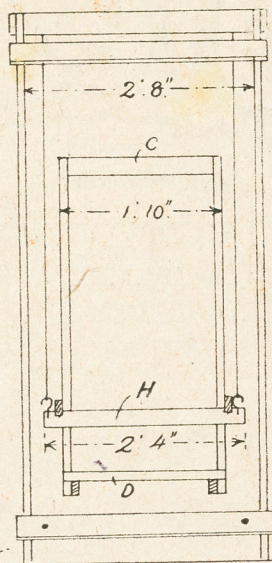


Fig. 2—Front view showing chair position

long. The rail is jointed to the sides as in Fig. 4 and pinned.

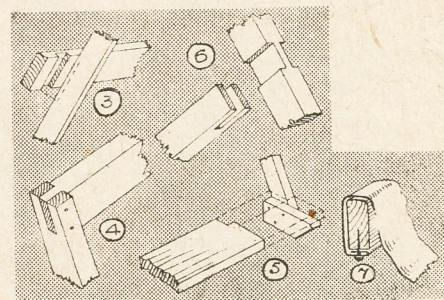
To hold the footboard, nail or screw two pieces of 1in. by 2in. wood, 6ins. long at the bottom on the inside of rails (B) (as at E), and to these nail on the footboard, as in Fig. 5.

It will be seen that it is notched on each side to fit between the side rails (B) of the chair. It is also nailed through the sides. Care should be taken to keep strictly to the measurements given in Fig. 2, so that the seat frame fits over the frame uprights, making a close and good fitting.

sides—rails (B) and (F) and there screw securely at a height of 1ft. 4ins. up, as seen in Fig. 1.

Chain Suspension

For suspending the chair, galvanised iron chain is recommended as better than rope. At each end of bars (H) bolt and screw in a strong hook. In the top bar (A) put in similar hooks or hooks having threaded shanks so that they pass through the rail and are held by a nut on top with a thin iron washer in between the wood and the nut.



Figs. 3 to 7—Details of various joints

manner under edge of front rail (H), see Fig. 7. The sharp edges of the rails should be rasped away and made rounded and smooth so the canvas shall not become frayed or worn along the edges.

To finish the job two lengths of strong sash cord should be stretched between the trestle legs and fastened to the cross rails about 2ins. in from the ends, as shown by the holes in the rail in Fig. 2. These ropes will help to take the strain off the hinges at the top of the legs.

The Craftsman's Notebook—

Tube-Cap Uses

THOSE small plastic or metal caps of various shapes and sizes on tubes of tooth paste, etc., may be turned to good account when the tube is finished with. Model makers will find them just the thing for knobs on miniature furniture and doors of model houses. By giving the centre a bright touch of aluminium or white paint they would make headlamps for model cars.

Four such caps make feet for small ornamental boxes, trays, and so on. They will convert ordinary nails into pleasing pegs for hanging pictures, the cap being fixed to the head after the nail is in position on the wall.

For many jobs the cap can be secured to a wooden peg to hold it in position or placed over the head of a nail or screw and made firm with some hard-setting substance such as sealing wax.

Making Hats a Hobby

MOST people who take up collecting for a hobby turn their attention to the more popular subjects, like stamps and autographs. But there are also quite a number who find it most fun to hit on something quite different from anyone else, so they can get together a collection that is definitely unique.

Nowadays, however, it is rather a problem to find anything really original, for every kind of collectable article seems to have been thought of by someone or other. Buttons offer plenty of scope, bus tickets and bottle labels suggest possibilities, though they are not original ideas. How about hats?

I do not mean real hats—most of us prefer something more compact that can be easily housed and displayed. But what one might consider is making miniature replicas from wood or metal,

and it would provide an opportunity to combine handicraft work with collecting. As a matter of fact I recently came across a perfect tiny model of a helmet, little larger in size than an egg.

Skill in carving from wood or working in metal would be necessary, but anyone interested could find lots of examples—the hats which postmen used to wear with peak at front and back. Then there are those which telegraph boys used to wear, naval and military hats and helmets, the fireman's helmet, mortar-board, the straw boater, bowler, top hat. Even during recent years distinctive types have been superseded by the modern flat type, so they are now interesting relics.

In most cases actual specimens would probably be difficult to find for use as a model, but old photographs and drawings are helpful. And when those of recent years have all been dealt with it would make the collection even more interesting to look up headgears of earlier centuries.

The Craftsman

Hours of pleasure in constructing and using this MODEL SAILING YACHT

THIS fine sailing yacht has a hull measurement of 24ins.; quite a good size vessel, and capable of providing much interest in sailing it. The hull is built on the bread and butter principle, consisting of several layers, glued together and subsequently shaped up. There is nothing difficult in the work, and some scope for individual skill in the work of modelling.

The wood must be carefully chosen, boards of good quality deal being required, planed to a thickness of $\frac{3}{8}$ in. Only wood entirely free from knots should be used and it should be as straight grained as possible. At Fig. 1, a side view and half plan are given; from these the exact length and shape of each layer can be obtained.

Hull Shapes

First cut the layers to their exact length. To facilitate this matter, the lengths are as follows. (A) 24ins., (B) 23ins., (C) 20ins., (D) 15 $\frac{1}{2}$ ins. Their exact position, relative to each other is shown clearly in the side view. Now mark on each the shape, taken from the half plan view. Each shape must be symmetrical, and about the best way to ensure this is to draw the half shapes on stiff cartridge paper and cut out.

On each layer strike a pencil line along the middle, lay the pattern one side of the line and run a pencil round it, then reverse the pattern to the opposite side of the line and pencil round again. Both sides should then be alike. Note the stern ends of layers (A) and (B) are cut to a slight curve.

Cutting to Outline

The layers can now be cut to shape with a keyhole or bow-saw, and accuracy should be observed to better ensure a shapely and well-balanced craft. The work of cutting out the interior of the hull, necessary to lighten the vessel, can best be carried out before the shapes are glued up, as such a job can be laborious afterwards. Proceed in this manner.

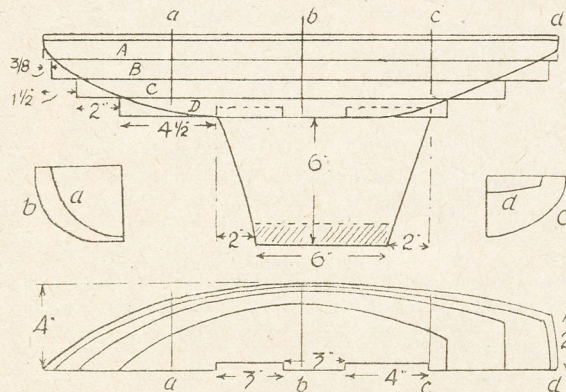


Fig. 1—Side view and plan of hull parts

Take shape (A) and lay it face downwards on the bench. Place shape (B) on it, in its exact position, and pencil round it to (A). Lift (B) and on the pencilled shape marked on (A) run a second shape, just $\frac{3}{8}$ in. inside it. This should be sawn right out, quite an easy job if a couple of holes are bored through at the stern end to admit a keyhole saw.

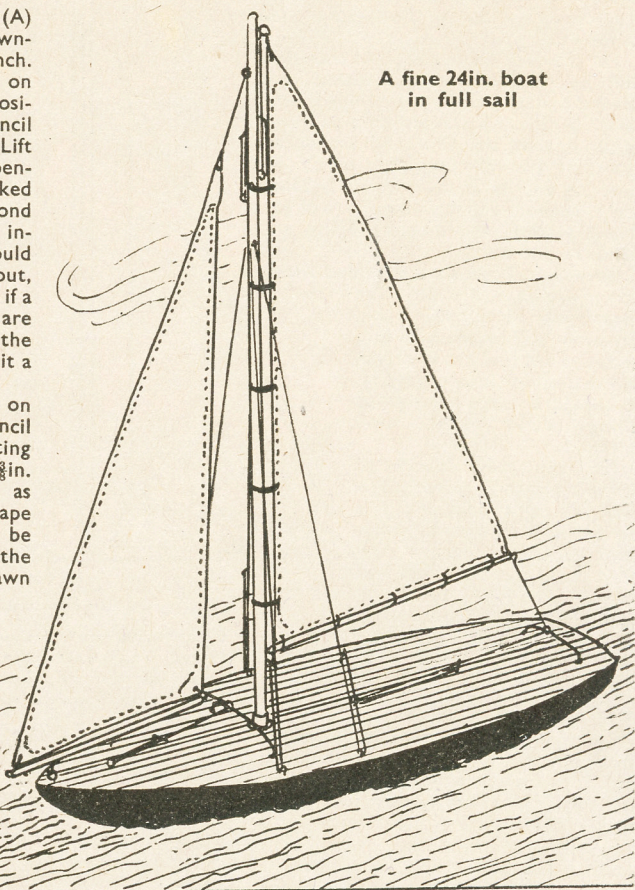
Place shape (C) on to (B) and pencil round that, cutting out the shape $\frac{3}{8}$ in. inside the line, as done for (A). Shape (D) should then be placed on (C) and the latter similarly sawn out, the result being shapes (A), (B) and (C) having their unwanted wood removed at the start, and saving a lot of hard work afterwards. Shape (D) is solid, but has

two mortise slots chiselled out along its centre, just $\frac{1}{8}$ in. wide and deep, to admit the keel of the yacht.

The shape of the keel is given in the side view. It is cut to the shape and dimensions given, plus $\frac{1}{8}$ in. at the top for the tenons. Cut it from $\frac{1}{2}$ in. thick wood, with the grain running from top to bottom, and reduce its thickness by careful planing to $\frac{3}{8}$ in. at the bottom edge.

The whole four layers are now glued together in their correct respective positions. Use a waterproof glue, and cramp tightly up for some hours for the

A fine 24in. boat in full sail



glue to get really hard before shaping the hull.

Shaping the Hull

Shaping should be commenced by bevelling off the 'steps' until the side view follows the lines in diagram Fig. 1. The shaping can then be continued, and here the half-sections shown of the vessel at parts (a), (b), (c) and (d), will be helpful. A sharp chisel and mallet will speedily remove the rough, and a spokeshave is about the best possible tool to continue the work with. Finish off with a file, then coarse and medium glasspaper, until a shapely vessel results.

The deck can be cut from $\frac{3}{8}$ in. fretwood, and a hole should be bored through at 8ins. from the bow end for a mast socket. The deck can be then glued and screwed on, the whole turned over and the keel glued in place. Cramp up again for the glue to harden. Then finish off the shaping, as may be necessary, the front edge of the keel being rounded a little, but the back edge left square.

The keel must be weighted, for this make a wood mould.

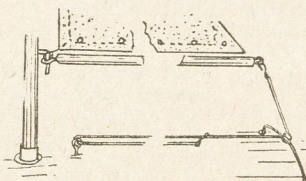


Fig. 3—Mast, boom and lines

cutting out the shaded portion of the keel in a piece of $\frac{1}{2}$ in. thick wood and nailing a spare piece of wood underneath, as a bottom to the mould. Melt some lead in a ladle or old tin, and pour in the mould. Make two of these casts, both of equal thickness, then drill them for holding screws and screw them either side of the keel.

For the deck fittings a pair of travellers will be required, a mast socket, and several metal clews for tightening up the lines. Also a few screw hooks and eyes of the smallest size. Fix the mast socket, the mast itself can be planed up to $\frac{1}{2}$ in. tapering to $\frac{3}{8}$ in. at the top. It is 25 ins. long. The fore and main boom are of $\frac{3}{8}$ in. round section, and measure 8 $\frac{1}{2}$ ins. and 13 ins. respectively.

Both these booms are provided with a screw eye at each end. The fore boom has a small hook, driven in at 2 ins. from its fore end, and a screw eye is driven in the deck for it to engage in. It should be free enough to swing round under wind pressure.

For the main boom to swing on, a small wire nail is bent at right angles and is driven in the mast at about 2 ins. above the deck. The position of the travellers will be seen from Fig. 2, one being near the mast and the other close to the stern. A small ring is slipped on each traveller.

Rigging

For tightening up the sails, lines are provided. Fit each with a wire hook, pass through the ring on the traveller, and thence to a screw eye driven in the deck. The lines are fitted with metal clews for rendering them taut. The detail, Fig. 3, shows how these lines are used to tighten up the mainsail. The fore sail is similarly fitted up.

For staying the mast, two screw eyes are driven in, opposite sides, about 6 ins. from the top. From these, lines are attached and are threaded through screw eyes driven in near the edge of the deck. Both lines are tightened up with clews, as before. The general view of the completed yacht shows these stays quite clearly.

For the sails any fine but strong material can be used. A pattern for each must be made, and to get these out, draw the sail plan, shown in Fig. 2, full size. Having put in the mast and booms, the size of the sails is just a matter of copying the diagram. Cut these patterns out and pin to the material. Allow $\frac{1}{2}$ in. extra all round for hemming.

Strengthen the corners with an extra triangular piece of the stuff, sewn across.

The back edge of the mainsail, and its bottom edge, are stiffened with a tape, sewn along. In these a few small brass eyelets are fixed for lashing the sail to mast and boom.

The foresail is tied to its boom at each end. At the top a line, fitted with a wire hook, and threaded through a screw eye in the mast, is used to draw

it tight. The line is tightened with clews like the rest.

The mainsail is provided with a similar line to draw it up. At the bottom

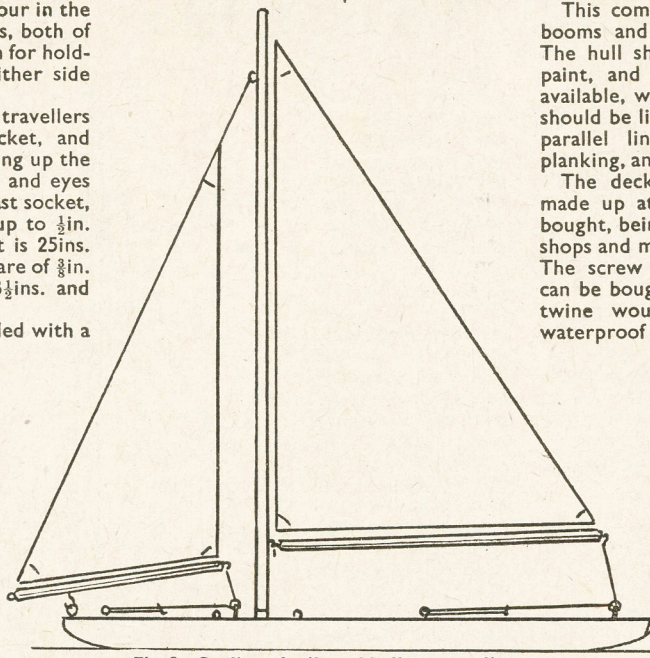


Fig. 2—Outline of sails and hull to waterline

back corner of the sail, a wire hook is sewed, which enters the screw eye of the boom at the mast end. The sail is lashed with fine cord to both mast and

boom, and tightened to the screw eye at the opposite end.

Painting and Fitting

This completes the main work. The booms and mast should be varnished. The hull should be given two coats of paint, and finished with a coat of, if available, waterproof enamel. The deck should be lined with a soft lead pencil in parallel lines, $\frac{1}{4}$ in. apart, to imitate planking, and is then clear varnished.

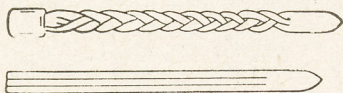
The deck fittings can, of course, be made up at home, but are really best bought, being very reasonable. Most toy shops and model stores can supply these. The screw hooks and eyes mentioned can be bought almost anywhere. A fine twine would do for the lines, but waterproof fisherman's line would be better and last longer. All fittings should be in brass if possible, to avoid rust.

Reference has already been made to the quality of the wood. It will be better here to purchase short ends for the shapes, rather than a long enough board, as some waste may well be saved. All layers are cut from $\frac{1}{4}$ in. thick board, 8 ins. wide.

A piece of fretwood, 24 ins. long and 8 ins. wide will be needed for the deck, and a small piece of $\frac{1}{2}$ in. wood, 10 ins. wide and 6 $\frac{1}{2}$ ins. long for the keel. The mast and booms could, most likely, be planed up from scrap wood,

Plait Your Own Belt

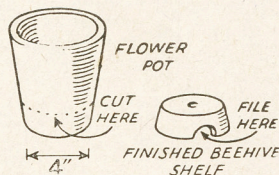
HERE is a fine hint for those who wear a plain belt and would prefer to have a fancy one. Simply cut it into



three strips as in diagram, and plait as you do when you plait string. Your belt will look so nice, and the end can be resewn to finish off.

Simple Beehive Shelf

OBTAIN an ordinary flower-pot with a base of about 4 ins. diameter. Then with hacksaw, cut off the base at a



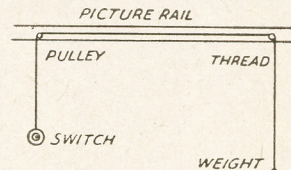
point about 2 ins. away from it. You have then only to file a semi-circle in the side to complete this serviceable and cheap piece of apparatus, as shown.

Age on Models

HERE is a hint if you are making a model fort or anything that wants to look weather-beaten. It is a good tip before painting, to paint the model with glue and throw on cork bits such as grapes are packed in. When the glue is hard, paint over in the usual way. The same tip can be used with good effect to represent a shrubbery.

Bedside Switch

HERE is a way in which to switch off the light after getting into bed, in cases where there is no two-way switch



over the bed. First fix a small Meccano pulley on the picture rail above the switch. Next put another pulley at a point above the bed where a thread could be reached easily. Now just tie a piece of strong thread to the dolly of the switch, then hang it over the pulley and tie small round weights on the end to keep it taut.

Save money and enjoy making this practical PICK-UP PLAYING TABLE

THE construction of this Gramophone Pick-up has been simplified as far as possible and it may be built without special tools. Even soldering is not necessary, but despite this results are good. It has been compared with expensive ready-made pick-ups, both of the magnetic and crystal type, and the results obtained were a pleasant surprise. With a little care there is no reason why a unit giving equally good results should not be made at a cost almost negligible compared with that of the ready-manufactured article.

The Pick-Up Arm

This is cut from a light close-grained wood and is shown in Fig. 1. The thickness of the wood used is of no importance, but material about $\frac{1}{2}$ in. thick is most convenient. The shape shown is about $\frac{3}{4}$ in. wide at the narrow end, increasing to about $1\frac{1}{4}$ ins. at the rounded end. At the narrow end a piece $\frac{1}{2}$ in. by $1\frac{1}{2}$ ins. is cut out, forming a recess into which the pick-up itself will fit.

A groove about $\frac{1}{8}$ in. wide and $\frac{1}{4}$ in. deep is cut along the underside of the

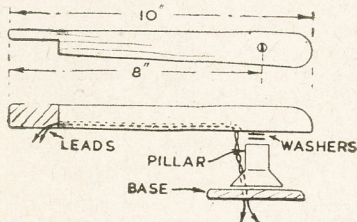


Fig. 1—The pick-up arm and mount

strip so the leads which will be used can run out of sight. The top edges of the arm should be well rounded, after which the arm is glasspapered and varnished brown.

The arm is pivoted on a bolt, one of 2 B.A. being suitable in size. This bolt passes directly down through the arm and into a supporting pillar or mount. A cotton-reel with one end sawn off can be used for the latter and the bolt should be made a tight fit down its centre. Two metal washers are placed between arm and mount to avoid friction. If the bottom of the pillar is drilled out, lock-nuts can be run on the bolt.

A base is formed from a disc of wood about 2 ins. in diameter. Drive a number of countersunk screws upwards through the base to hold the pillar in position. The whole mount can then be screwed down to the motorboard when required, by passing three or four small screws downwards through the disc, near its edge.

Important Points

The arm must turn freely on the bolt, yet not be able to wobble sideways. It

should, however, have a small free up-and-down movement at the thin end. To arrange for this, the pivot hole should be lengthened slightly at the bottom to form a slot, as shown at (C) in Fig. 3. This can easily be done with a small chisel, taking care to keep the slot as smooth as possible inside so that there is no sideways wobble or impediment to the motion.

It will then be possible to lift the end of the arm to remove the pick-up from the record, and the pivot bolt should not be tight in the arm itself, of course. The metal washers between arm and pillar are essential or the friction of the wooden surfaces will drag the needle to one side of the groove, when playing.

A small hole is drilled straight down through the bottom of the pillar and disc so the leads from the arm may pass through. Thin flex should be used for these leads. They may be held in the

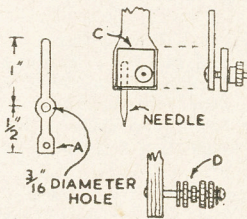


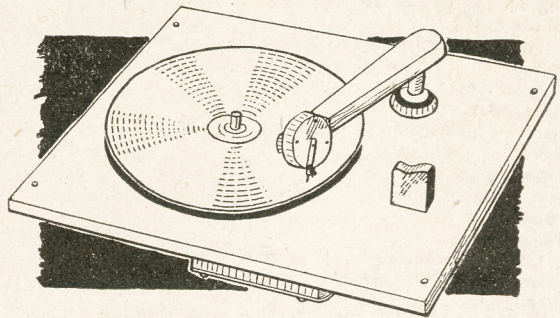
Fig. 2—The needle-holder

The needle-holder is shown in Fig. 2, and is cut from some fairly stout metal; aluminium or brass will prove easy to work. The bottom of the strip, marked (A) in Fig. 2, is drilled for the smallest

bolt to hand. (8 B.A. is suitable, and a size readily obtainable). This bolt also holds a small square piece (C), a terminal-head being used, so it can be tightened and loosened with the fingers.

The small piece (C) serves to clamp the needle in position and this proves quite secure if the front edge and top of the piece (C) are bent sharply over at right-angles to prevent the needle slipping out.

If the constructor can solder, a needle-cup could be made by soldering a short length of small-diameter tubing to



the end (A) and arranging a small set screw which will pass through the side to grip the needle.

The Pick-Up

This is made from one of the easily-obtainable ex-service balanced-armature headphones. Remove the cover and leads. The diaphragm is held in place with four small bolts. One of these is removed and will form the pivot for the needle-holder shown in Fig. 2.

So the needle-holder may vibrate freely but without rattle five small washers are cut from thin rubber such as that taken from an old cycle inner-tube or puncture-mending patches. Four of these washers should be about $\frac{1}{4}$ in. in diameter. The other will be about $\frac{3}{16}$ in. in diameter and will go right inside the centre hole in the piece (A).

To assemble the parts, place a small washer on the bolt that has been removed, then two rubber washers. Then place on the small rubber washer and needle-holder, completing with two more rubber washers (see (D) in Fig. 2, and also Fig. 3). It will be seen that the needle-holder is now pivoted without being in contact with the bolt. This insulation is not used for electrical reasons, but to prevent chatter or

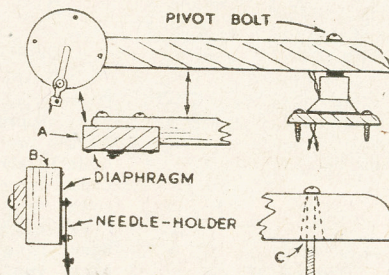


Fig. 3—The completed pick-up and arm

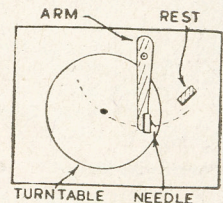


Fig. 4—Turntable and pick-up positions

vibration between holder and bolt. The small bolt should not be screwed up too tightly.

Diaphragm Fixture

It is now necessary to fix the upper end of the needle-holder strip securely to the centre of the earpiece diaphragm.

With the type of unit mentioned, a small bolt is used in the centre of the diaphragm and if this nut is removed the strip can be screwed securely in place.

If a type of earphone is to be used which has no such bolt (and it will not be found on the older type phones), some other method will have to be employed. It may be possible to drill a small hole through the centre of the diaphragm (which can easily be lifted off), taking care not to distort the latter. Or a small projection may be bent over on the top end of the needle-holder strip and secured with a touch of solder or sealing-wax to the centre of the diaphragm. The method used is not important so long as a sound joint is obtained.

Completing the Unit

The pick-up is secured to the arm by means of two small bolts from the back. These pass through the wood into the holes found in the back of the earphone unit. The needle should slant a little in the direction of rotation of the record, as shown in Fig. 3. Here (A) is a top view of the pick-up and arm, and (B) a view looking directly at the arm from its

thin end.

Take two leads from the earpiece windings right along the arm and through the mount as described.

Turntable Position

The drawing at Fig. 4 shows a view of the completed motor board. The pick-up mount is secured in such a position that when the arm is swung inwards as shown by the dotted line, the point of the needle comes just beyond the centre of the turntable spindle. A rest, cut from wood, is screwed at a convenient position so that the arm may be rested on this without the needle touching the motorboard when records are being changed.

The motorboard itself should be cut according to the size of the cabinet which is to be used or made. Details of motorfixing will also depend upon the motor itself, and whether it is spring or mains driven. Usually, no difficulty will arise. If a new motor and turntable are purchased, the turntable will usually be a simple push-fit on the spindle, which will be slightly tapered.

The motor is normally secured under the motorboard by means of three or

four bolts, hidden from sight under the turntable, which is placed on afterwards.

Final Details

Leads are taken from the pick-up to the pick-up sockets of a receiver or amplifier. If the receiver has no such sockets, the leads should be connected to grid bias negative and the grid socket of the valve coming before that which operates the speaker. This point has been covered in detail in past issues.

Unless the amplifier is very powerful it is unlikely instability will arise. If it does, screened flex must be used for the lead from valve grid to pick-up. The outside screened covering should be wired to some earthed point, as should the metal parts of the earpiece. But normally this is not required.

If the earpiece used is rather heavy, the arm may be counterbalanced by screwing a piece of lead on the underside of the rounded end of the arm. This will reduce the pressure with which the needle runs on the records, reducing scratch. The pressure must not be too light, however, or rattling will result. In practice, it will be found in no way critical.

Useful for office desk or at home is this simple PLASTIC PAPERKNIFE

THIS Perspex paperknife never fails to draw admiration from those who see it used. It has a finish like glass, and can become as important to the office desk, as a key to a lock. Out of a piece of Perspex 3mm. thick, 6ins. wide, and 7½ins. long, you can make six attractive paperknives, and sell them easily to clear your costs and make some profit.

First of all make a template of the paperknife on a 7½ins. strip of 1in. gumstrip buff coloured sealing tape. You can copy the outline of the diagram at Fig. 1 for this purpose. Then, with a sharp pair of scissors, cut out the template from the gumstrip. Now divide the width of the sheet of Perspex into 1in. sections, as shown in Fig. 2, and then with a ruler, preferably a steel one, and a scribe or a long sharp-pointed nail, firmly scratch the 7½ins. lines down the Perspex at 1in. intervals. When these white lines appear the Perspex will show six sections.

Cutting to Shape

In the first of these stick your gumstrip template of the paper knife. Now you require a fretsaw and blade, and if possible a V-block screwed to the side of an old table, or a wooden draining board near the sink. If you cannot fix a V-block, use a firm bench or the top of an old desk to cut the Perspex round the contour of the template.

When you have released the shape from the Perspex piece, remove the template by soaking the rough model in

water. When it has been dried, it is ready for filing and tapering. For this work you will need a 10in. smooth parallel flat file, a 3in. half-round smooth file, glasspaper No. 1 and OO, an old sock, a piece of silk, and a tin of Silvo polish.

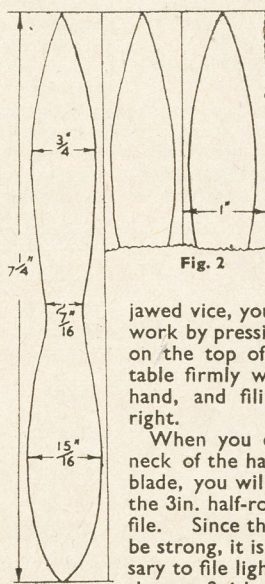


Fig. 1

Begin on the sharp edges of the handle of the paper knife, by draw-filing with the 10in. file. If you have not a smooth-

jawed vice, you can do the work by pressing the shape on the top of your work table firmly with your left hand, and filing with the right.

When you come to the neck of the handle and the blade, you will have to use the 3in. half-round smooth file. Since this neck must be strong, it is only necessary to file lightly here and then to finish the smoothing with the No. 1 glass-

paper. Now the blade edges must be tapered evenly; they must gradually increase in thickness from the point to the 3mm.

neck. You will be wise to file one surface of the edge first. Complete this by constantly turning over the paperknife. When you have smoothed down all the edges of the model with glasspaper, place the paper knife down on a clean piece of drawing paper and examine for symmetry. If you are satisfied that the curves of one side balance with those of the other you can begin the finishing.

Polished Finish

To ensure the glass transparency of the finished model, you must be very careful and patient with the tedious first removal of all face scratches. Work at them all, never mind how faint they may seem. To do this work, wrap a strip of glasspaper No. OO round an empty matchbox, or a similarly shaped wood block, and rub along the faces firmly but evenly, and always in the same direction.

When you think one face is clear of all scratches, turn the paperknife over on a damp cloth, and work on the other face. Occasionally hold the model to the light to detect all the very fine scratches.

Now to bring out the glass finish of the Perspex soak a portion of the old sock in the Silvo, and rub one face vigorously until a thin fine, almost dry film of paste appears on the Perspex. Then change the sock for the silk, and rub vigorously again. Now turn over this face on a damp cloth, and treat the other face in just the same fashion.

When you have finished this rubbing you should have a Perspex paperknife, a treat to behold. (148)

You can get quite good photographs by making and using A PIN-HOLE CAMERA

PIN-HOLE cameras are, of course, no novelty, as they were made and used in the earliest days of photography. Some very good photographs, indeed, were taken with these simple cameras, comparable to those taken with the more normal cameras of the period. Very little has been seen or heard, however, of the pin-hole camera in recent years, due, no doubt, to the perfection of the modern camera. The pin-hole camera, however, is extremely simple to make and to use, and provides an instructive and amusing hobby with no great initial outlay.

How it Operates

As the name suggests, the pin-hole camera operates without the more usual kind of lens. The image is projected on to the sensitised plate emulsion through the medium of a small pin-hole located in the front of the camera. This optical phenomenon can be demonstrated by making a pin-hole in a piece of cardboard, holding a sheet of dark paper a short distance beneath, then placing both under a lighted electric bulb. A perfect image of the glowing filament will be cast upon the lower sheet of paper.

To make the camera, two pieces of smooth wood, 4ins. long by 5ins. wide by $\frac{1}{4}$ in. thick are required for the sides, and

washer between the disc and wood before screwing into position, to form a light-tight joint.

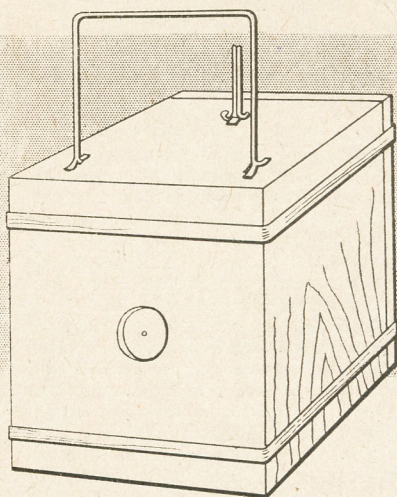
Care should also be taken to see the screws do not penetrate through the outer surface of the wood. Otherwise it is probable that a light leakage will occur at this point, and spoil the results of the camera.

The Pin-hole

A small pin-hole is next made in the centre of the metal disc (Fig. 1 C). This cannot, of course, be made with a pin owing to the extremely soft nature of the metal. The best procedure to adopt is to support the disc on a firm block of wood, then remove a skim of metal from the centre of same with a small metal drill.

It is absolutely essential the metal in the vicinity of the pin-hole is reduced as thin as possible with the drill, without actually breaking through the metal. This is to obviate the refraction of the light through the edges of the pin-hole, which would otherwise tend to blur and distort the photograph.

When the metal has been reduced as far as possible, a small hole is started by gently tapping with a small nail. Then a needle is placed in the puncture and gently but firmly pushed through. The diameter of the needle should be approximately that of an ordinary pin. When the needle has been removed, the hole should be inspected for any rough edges, which should be carefully removed with fine emery paper.



The camera completed and ready for use

leakage, the affected part should be covered with a strip of adhesive tape, which will effectively stop the leakage.

Painted Interior

The interior of the camera must next be painted with a dead matt black paint. This paint can be purchased from any photographic dealers, or a good alternative is indian ink carefully applied with a soft brush.

The back of the camera is constructed from a piece of wood of similar dimensions to that of the front, to which is screwed a further piece of wood, 4 $\frac{1}{2}$ ins. by 3 $\frac{1}{2}$ ins. by $\frac{1}{4}$ in. (Fig. 2 A). The back must be a very accurate and tight fit in the camera end, and the rebated design ensures an efficient light trap. Two tinplate runners of the shape illustrated in (Fig. 2 B) are then screwed into the back. The runners are 2 $\frac{1}{2}$ ins. in length and positioned equidistant with 3 $\frac{1}{2}$ ins. distance between the top and bottom slots. The depth of the slots is $\frac{1}{16}$ in.

The back end of the camera must now be planed and glasspapered until absolutely level and smooth. Then thin strips of red plush or velour are glued around same to form a light seal, as in Fig. 1 D. The inside of the back is painted with the black finish as previously mentioned, particular care being taken to cover well the bright parts of the plate-runners.

The view finders are of the dimensions, and are fitted, as in Fig. 1 E. They are simply made of stout wire secured to the camera by brackets as shown (Fig. 2 E). As will be seen, this is in the form of a

(Continued foot of page 136)

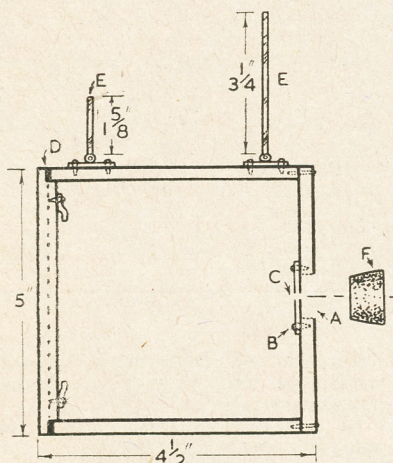


Fig. 1—Sectional view through camera

two further pieces, 4ins. long by 3 $\frac{1}{2}$ ins. wide by $\frac{1}{4}$ in. thick for the top and bottom respectively. These are made into a box by butt joining the edges with strong glue and panel pins. The front end of the camera is made from a piece of wood, 5ins. by 4ins. by $\frac{1}{4}$ in.

In the centre is drilled a $\frac{1}{4}$ in. diameter hole (Fig. 1 A). A disc of thin tinplate, $\frac{1}{16}$ ins. in diameter is then placed over the hole and screwed into position with several small screws (Fig. 1 B). It is advisable to interpose a thick paper

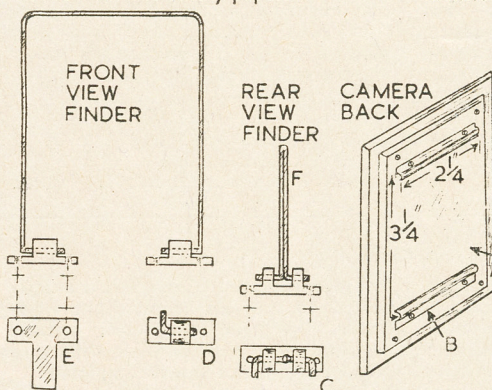


Fig. 2—Details of view finder assembly and camera back

A spot of indian ink is then applied to the hole, and the hole cleared of any surplus ink by gently blowing through until clear. The camera front is then fastened into position with glue and panel pins, with the disc side inwards.

The camera must now be held up to a strong light, sunlight preferably, to detect any light leakages along the seams or around the pin-hole assembly. During this examination, a pin should be inserted in the pin-hole to make detection easier. In the event of a light

Some various methods of making HOME-MADE PLASTIC WOOD

PLASTIC woods are more than useful for small filling jobs such as covering the heads of screws, obliterating 'shakes' and shrinkage opening in timber and the like.

If you want to do anything big with fillers of this kind (and quite big work can be attempted), the home-made varieties certainly run out much cheaper. Even the filling of cracks over an apparently small area of timber before painting can become a 'big job' in the end and take more of the filler used than at first seemed possible.

When plastic wood is employed to replace, say, a section of broken wooden moulding (which it can do well), then a lot of it is required from the start, as one has to be liberal in the first rough outline of the missing part—the final precise shape being obtained by sandpapering, etc., later when complete drying has taken place. Allowance has to be made with most plastic woods for shrinkage, some contracting more than others.

Simple Mixtures

Now about making your own wood fillers. There are several types that can be concocted but the simplest is just a mixture of fine sawdust and glue. The glue should only be of medium thickness, if anything on the thin side, and the sawdust must be poured in slowly, mixing and pressing till a stiff pasty mass is produced. This is worked into the openings to be filled and pressed well home. Considerable shrinkage takes place with this simple variety of plastic wood and a good allowance must be made for this by watching the fillings as they dry and working in more as required.

For the filling of holes in wood—as against long openings, etc.—a good plastic is made out of:—

- (1) Powdered white lead.
- (2) Whitening.
- (3) Sawdust.
- (4) Linseed oil.
- (5) Japan drier.

Mix the powdered white lead well with the whitening first and work in the sawdust, then slowly add the linseed oil till a consistency like putty has been secured. Now put in the Japan drier till a more plastic paste-like mass comes into being, when the filler is ready for application.

Colour pigments can be added if desired to match up with various woods. A quite good mahogany tint is given by working in powdered Burnt Sienna. Oak can be matched with Raw Sienna and Vandyke Brown gives walnut. The actual shade required is obtained by slowly adding the pigment till the desired shade comes about. For very tiny holes this filler can be used without the sawdust, but this is necessary if the job in hand is the making up of a definite wooden surface.

Here is a type of plastic wood filler which has the characteristic of setting rock hard. It is made by heating and mixing beeswax and resin to the proportions of:—

- | | |
|-------------|------|
| Beeswax ... | 1oz. |
| Resin ... | 1oz. |

To this compound is mixed a little very fine sawdust, also pigments for matching up purposes as above. This filler has to be applied hot. As with the previous pastes, for very small work the sawdust can be omitted and used in this way, they might be considered 'fillers' rather than plastic woods, but this next mixture is truly a wood, and is rather like the stuff you buy in tubes.

Required are:—

- (1) Wood Wool.
- (2) Wood Meal.
- (3) Cellulose.

These three constituents are mixed

well together into the familiar pasty mass, which, if not being used at once, must in this case be put into an airtight tin. Or some old tubes can be opened up and filled, the ends then being pressed over again. Should this plastic wood become hard even with all your care, it can be brought back to a state of workability by kneading in either acetone or amyl acetate.

Whitening and linseed oil alone can be used as a filler. Matching in this case is done by introducing a little of the correctly tinted pigment mixed with a small quantity of gold size and a few drops of turpentine. To this again can be added finely powdered wood if the dimensions of the holes justify it.

Plugging

At all times when applying plastic wood make sure that the holes to be filled are free from obvious grease, especially when the plastic has to adhere to a surface. When a really large hole has to be filled it is best to roughly fill it first with a wooden plug, finishing around this and above with the plastic. Imitation grain can be obtained by carefully working on the surface with a knife, connecting up the ends of the surrounding grain marks.

When quite dry any of the plastics suggested can be worked on with the usual tools like chisels and files and they respond well to sandpapering. A screw or nail can also be run in as with solid wood. Indeed, there is no better way of repairing a too large screw hole than to fill it with plastic wood, wait until complete drying has taken place, and then replace the screw in the usual way.

It saves a certain amount of time and trouble, however, when a screw has to go into plastic wood, if a bradawl hole is first made while the filling is still damp. The screw must not be put in, however, till it has dried right out. (138)

Pin-hole Camera—(Continued from page 135)

capital 'T'. The long part of the blank is curled round to form a guide for the view-finder wire. In the case of the rear view-finder, the guide is divided into two. With the front view-finder wire inserted through the guides, the projecting wire should be bent at right-angles towards the front of the camera. As will be seen in Fig. 2 F, the rear view-finder consists of a length of wire bent double, and the projections through the guide should be bent at right-angles towards the rear of the camera.

In this way, when the camera is in use, the view-finders are supported vertically, and after use they can be folded unobtrusively away along the top of the camera. The front view-finder is screwed exactly central to the front of the camera whilst the rear is aligned so

that, when viewed through, it is exactly central to the axis of the front view-finder. A tight-fitting cork is next required for the pin-hole aperture (Fig. 1 F) and the camera is completed.

The correct size of plate to use is $3\frac{1}{2}$ by 2 $\frac{1}{2}$. A fairly fast plate should be used, and it is inserted in the runners in a dark-room by using a safelight. Many plates, notably of the ultra speedy panchromatic type, have to be loaded in complete darkness. This is not so difficult as at first appears, as these plates are generally packed in pairs with the emulsion side inwards. By careful manipulation, loading becomes a relatively simple matter.

When the plate is in position, the back is securely fastened to the camera with two strong elastic bands, which are

passed from the back to the front of the camera, and the cork is inserted in the pin-hole aperture.

As regards the necessary period of exposure, the chief factors are the prevailing light intensity and the speed of the plate used. Generally speaking, for normal conditions an exposure of some 15 seconds should be sufficient, but a certain amount of personal experiment will, doubtless, be necessary to familiarize one with the capabilities of the camera.

When taking a photograph, the object should, of course, be perfectly still for the duration of exposure. The camera should be supported on a firm object, the cork removed for the necessary amount of exposure, then replaced upon completion.

Practical improvements follow if you undertake these HOME HANDYMAN HINTS

THE happy handyman is the one who keeps a selection of odd jobs in hand for the days when he cannot get outside and is confined to his shed or workshop. He is quite content then, because he feels he is not wasting time and he enjoys variety in hobby. Here are a few suggestions which will do for any household.

When the milkman calls only once a day, the average family collects quite a

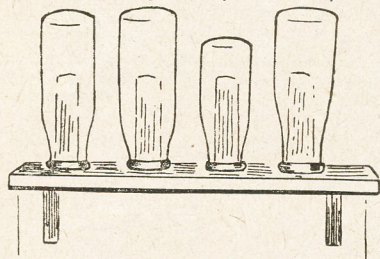


Fig. 1—For holding empty milk bottles

few bottles and these stand about and get kicked over and often broken. Failing this they take up valuable room on the draining board. The drawing at Fig. 1 shows a useful gadget.

In accordance with the number you have, cut a board about 5ins. wide and 18ins. long. On this, carefully spaced by measuring the bottles, screw lengths of broom handle or wooden dowell, the thicker the better.

Milk Bottle Rack

Milk bottles are about 9ins. high, so allow the spikes to be at least 6ins. high. If the board slopes a little this will allow the water to drain off. Fix board in a suitable place and paint or enamel to

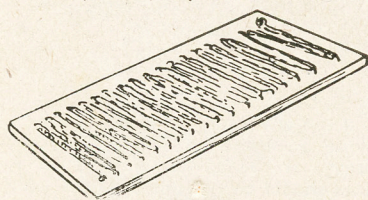


Fig. 3—A rope scraper door mat

prevent drips of milk spoiling the woodwork.

Shoe brushes are not the easiest things to use and often the fingers slip off and the hands get blacked up. Try fixing the majority of these brushes with the ordinary screw on handles purchased at the local store (see Fig. 2). Prevent the usual confusion in the home over which is black and which is used for brown polish. Enamel the handles to show.

Boot Scraper

Most of the household will be helping in the planting session in the near future and this means more muddy boots than ever. Scrapers are expensive and mats

spoilt when the mud is really thick. Make a home-made mat for this purpose, such as seen in Fig. 3.

Take a substantial wooden board about 12ins. wide and 18ins. long. Measure it as shown in the sketch so you can start at one end, near the edge with a knot in a piece of odd rope fixed to a staple to hold it. Now follow across the board from side to side at intervals with spaces of about 1in. between. Secure with staples at each end. Finish off with a knot. If you are unable to get a mat for a sunken well in the hall, then try this idea but make the rope strands closer.

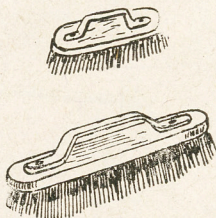


Fig. 2—Handles for shoe brushes

This can be removed for cleaning at any time.

If you have a cupboard for saucepans, you will always probably find the lids sliding out each time you open the door. If perched on the saucepans they are dangerous, so where can one put them? The answer is make a small rack along the base of the door, as seen in the drawing at Fig. 4.

See there is space and that the saucepans will not jar on them. Most saucepan lids only need about 2in. clearance with handle so the depth required is not great. The width of even a large saucepan

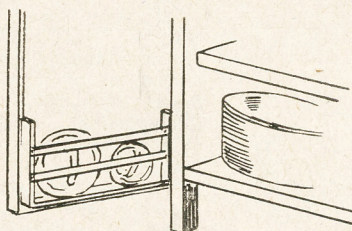


Fig. 4—A lid holder

is not more than 11ins. but design the rack to fit the articles you have. It is made by two uprights about 9ins. high at each end and screwed on the edges of the doors with a similar piece along the base. The usual 1in. laths are then placed across from side to side. You will find this a good home for all the lids.

Handy Holdall

There is always a collection of oddments around the average scullery such as dusters, polishing rags, boot and shoe

creams and brushes. You may find you just have space for this handy little low cupboard which is specially designed to be fitted, perhaps, between the gas stove and the copper. It will make a little seat and it will hold a lot of materials. Opening as it does, there are no doors to get in the way.

You may be able to find a strong fruit box to form the main frame which you can cover with composition building board. This is now off permit and polishes nicely on one side. The size could be 15ins. high and 12ins. deep. Do not make too deep as this will probably

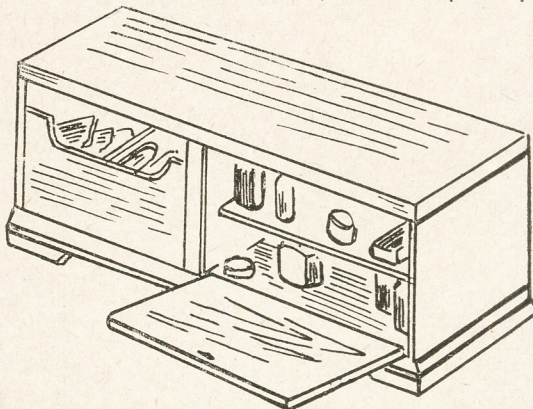


Fig. 5—A convenient cabinet for general materials of the kitchen

make it awkward when things get pushed at the back. It is divided half-way as shown and the first half has a neat half-front with pleasing cut-away to give easy access to the goods.

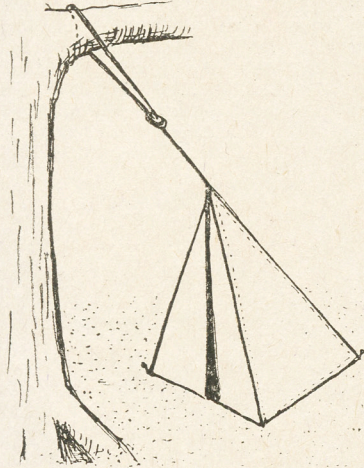
Two or three divisions can be put in this and the part is left open at the top. The second side, with lower hinged lid has a half-way shelf. Plan this to take all the bottles which will be kept in it and space out so brushes can be put in the bottom. Raise off the floor a little with some square wood or four cotton reels. You may be able to manage two like this and you will certainly be surprised how welcome this accommodation will be. (142)

Cutting Glasspaper

HERE is a useful tip. If you are in difficulty about cutting glasspaper, get a hacksaw blade and place it on the paper. Tap it once or twice with a hammer, remove blade and paper will tear off easily, as the teeth have perforated it satisfactorily.

Some useful suggestions for campers on THE POLELESS TENT

WE have become so used to central tent poles (or two, one either end) that it seems that no tent could be put up without them. Yet in other countries and among certain nomadic peoples the central or other vertical pole is dispensed with. Thus we get the gipsy's frame tent—seen in this



country—in which side pieces bent inwards and locked together give a frame which is covered with material.

The absence of middle poles is a tremendous advantage. Getting in or out of the tent immediately becomes infinitely easier while there is given rather curiously, a sense of much greater space, despite the fact that the pole or poles at the most only take up a very few inches of actual ground.

Bivouacs can easily be erected without poles, but it generally means that use has to be made of a tree or trees, and

great blobs of water then come down that will go through any light fabric.

However, suppose you want to make a poleless bivouac, the simplest is the 'A' tent. This is built up of three triangles of material and is supported by a sloping rope which goes from a strong peg in the ground to the limbs of a suitable tree, as shown.

The door can be placed in towards the tree or to one or other of the sides, according to your own special liking. An al fresco shelter of this kind is very convenient for carrying about.

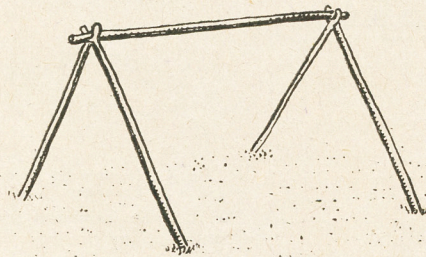
A small bivouac ridge tent can also be used without poles by making use of two trees not too far apart. A tent of this

top. Over this conical outline go the skins of the tent proper. These 'wigwams' are sometimes very large and a fire is often made in the centre, the smoke escaping through a hole in the top where the skins do not quite meet.

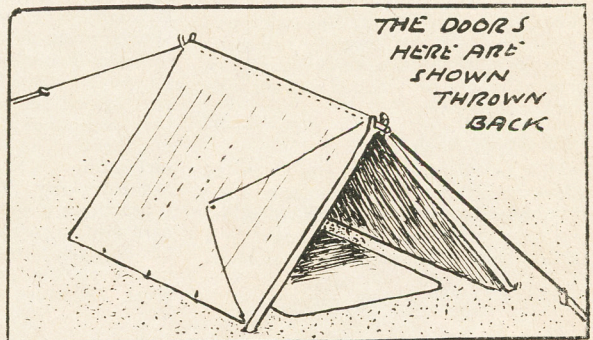
The idea of a frame tent can be copied with a small ridge tent or bivouac, as indicated. Four sticks are obtained a little longer than the sloping sides. These should, if possible, be forked at the top, or it will do if there is a fork in one and a fair-sized projection in the other. These pieces are pushed into the ground at an angle and a third piece, also suitably notched, placed across the tops. On this frame goes the canvas or material



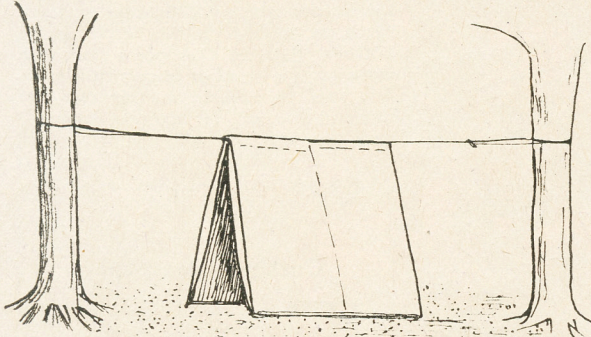
FOUR
PIECES AS
ABOVE ARE
REQUIRED



ERECT
THE FRAME
LIKE THIS



THE DOORS
HERE ARE
SHOWN
THROWN
BACK



camping under trees for any lengthy time is not good. For a single, warm, dry night there is no harm. But in long periods of bad weather trees can be dangerous on account of their liability to attract lightning or occasionally let drop a bough without warning.

Also in wet weather, while a tree holds off the rain for a time, there is no wetter place when it starts to 'drip', as

rain starts or a heavy dew sets in, as the rope will go like fiddle string and may snap.

The Red Indian tipi is, of course, without a centre pole, although the whole frame is made up of wood members. In this case a good number of spars are used, as good straight wood is plentiful in the Indian country. These are 'stacked' together and secured at the

kind must be of light material, or it will sag too much. The supporting ropes can be made adjustable by putting a 'runner' at one side or the other which can be taken up when the heat of the day causes the tent to droop. Remember, however, to slack off a little if

of the tent.

If this is very light the tent will stand alone on these under-lying spars. If heavy, or the day is rough, then guy lines should be run out from the peaks. Even so, however, the entrance to the tent is quite clear and the sense of greatly added space given. The whole tent, too, becomes more rigid than the entirely rope-held kind.

So then, we see from the gipsies, Red Indian and others that the central or end poles are not an absolute necessity to every tent—a fact which is amply proved by our own camping authorities who are always experimenting with various new types of tents, and from whom the 'A' and similar tents have come.

The whole idea is rather intriguing, so try some experiments yourself this summer. You might still drop on some entirely new and highly useful design of canvas home.

Your seaside visits are more interesting if you make SEA-SHELL NOVELTIES

THE illustrations that go with this article show, at a glance, a few of the dozens of artistic novelties that can be made from sea shells. One man and his wife, known to the writer, paid for their seaside holiday by making up, during the winter months, novelties from shells they had gathered and saved.

But apart from any considerations of financial profit, a good deal of interest can be gained from this class of work. Readers who are going on a seaside holiday should collect a good supply of shells, but those who are not likely to be going to the seaside are reminded that mussel and scallop shells, mentioned in this article, are easily obtainable in towns, from fishmongers.

Popular and Simple

Whilst we will describe some up-to-date novelties, mention must first be made of the good old favourite, the decorated jar. There is no reason at all why it should not enjoy a revival. After all, one of the very 'latest' fashions in ladies dress ornaments is the Victorian and earlier cameo brooch.

Another reason why we describe the process is because, simple as it is, few people do it right.

Any jar can be used—a jam jar, pickle jar, flower pot or, if an umbrella stand is required, a length of earthenware drainpipe. As regards the latter, one that has been slightly damaged may be obtained cheaply at a builder's yard, no doubt.

Now, assuming the jar is clean, it must first be painted with an undercoating

paint. Any colour will do. Unless the jar is painted first, the putty to be applied will crack and peel off. When the paint is dry, apply putty in an even layer all round.

The shells, previously washed clean of salt and sand, are now pressed in—not too deeply. Do not try for any formal arrangement but let the shells be in a haphazard form, as shown in Fig. 3. When all the shells have been applied, stab any exposed putty with a blunt pencil so as to 'dot' it, and then leave the putty to dry. This may take a week or so.

The exposed dotted putty is then painted with gold or aluminium paint (though we can use coloured enamels such as sea-green or blue).

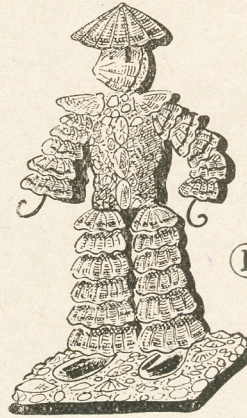
Two More Novelties

The paper weight (or doorstop according to size) (Fig. 4) is made in a somewhat similar way, the core in this case being a piece of brick or stone with a flat bottom. In this particular case the shells can be arranged in some sort of order.

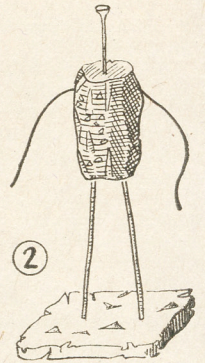
The Shell Figure (1) is a distinct novelty and is intended for a sideboard,

etc., decoration.

The arms and legs are formed by threading limpet shells, previously



①



②

NOVELTY SHELL FIGURE

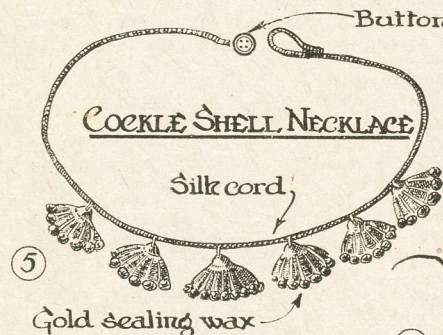
DECORATED JAR

③



④

PAPER WEIGHT OR DOORSTOP



⑤

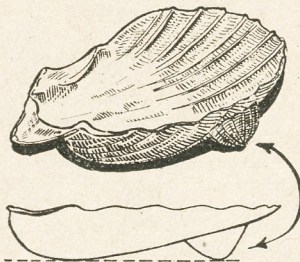
Button or small shell

COCKLE SHELL NECKLACE

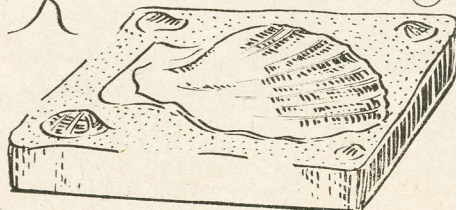
Silk cord

Gold sealing wax

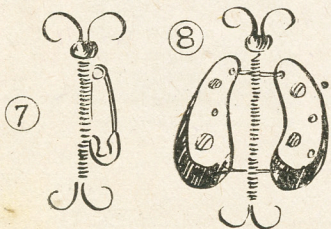
⑥



Two forms of scallop shell - ASH TRAY



⑩



⑦

⑧

BUTTERFLY BROOCH

drilled, over wires. Those forming the arm can be reasonably flexible, but the legs had best be made from the kind of round rod sold with Juneero sets.

Fig. 2 shows the foundation. The body is very roughly shaped from wood, not only because it is entirely hidden afterwards, but also because the roughness is essential for 'keying' the putty used.

Framework

Though Fig. 2 shows the assembled framework, it is necessary to apply the base afterwards, in order to allow the shells to be threaded on. The shells go one under the other, giving a flounced Latin-American effect to the trousers legs and sleeves. The shells should bed down well inside each other. A little putty inside each may be an advantage. Small mussel shells form the feet.

When the legs have been made, the base may be applied. This is of wood, roughened, two holes being bored for the legs. The rods are held in a tight fit here. The base is

given a layer of putty and then very small shells or shell fragments are applied. Fine pebbles as sold for aquariums may also be used on the base.

Figure Work

The body is also built up of putty. Apart from two or three 'buttons' made from small shells, the rest of the body can be, like the base, of small shell fragments pressed in.

The arms are made like the legs. Epaulettes at the shoulders mask the join there.

The head is a ball of putty modelled around the nail that was driven in. One shell does for a hat and another, the face. This may have Latin features painted on, simply. In Fig. 1 note the 'sideboard' whiskers.

It is impossible to avoid some putty showing, but this can be carefully painted, as in the case of the decorated jar. Avoid getting any paint on the shells.

Cockle-shell Necklace

The Cockle-shell Necklace is well worth making for bazaars, etc. The shells have each a hole drilled in them with a fretworkers drill. The shells are very soft, so no great pressure is needed in drilling. The shells can be painted or stained pink and dabs of gold sealing wax applied to the edges as shown in Fig. 5. They are then stitched on a length of silk cord or one of the new-style shoelaces.

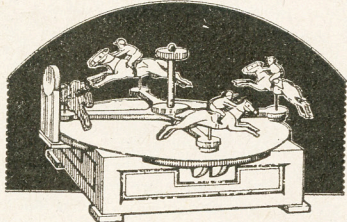
There are various necklace fastenings that can be purchased, but Fig. 5 shows a very simple way of fastening.

Another piece of jewellery from

Neptune's jewel box is the Butterfly Brooch seen in Fig. 8. This is made from the two halves of a mussel shell. Two holes are drilled in each half, as seen in the diagram. Twist two pieces of wire together, as in Fig. 6. Slip on a coloured bead and bend the top ends of the wire over, as shown. Then, with fine wire, bind a safety pin on, as in Fig. 7. Then bend up the bottom wires.

Our design for a MECHANICAL RACE GAME

Design Sheet for this Novelty given with this issue. Kit of parts (No. 2848) for making, 4/- from Hobbies Branches or for 9d. extra from Hobbies Ltd., Dereham, Norfolk.



With thin wire, the 'wings' can be bound to the body, but not, for preference, too closely. See Fig. 8, which also shows how the wings are gaily painted: light and dark blue, orange with red spots, yellow with green spots, or anything you most fancy. Use enamel paints. Other shells besides mussels can be used.

Few homes have really too many Ash Trays and two ways of making these

from scallop shells are shown in Figs. 9 and 10. In the first, the large shell is prevented from tilting by having a smaller shell, say, a limpet, stuck underneath it. Two such smaller shells may be required.

How To Fix

Just how to stick on these smaller shells is something of a teaser, but the present writer suggests filling the small shells with Pyruma modelling material, and pressing in position against the large shell. The modelling paste should be rather overflowing, so that some is squeezed out. Keep the shells carefully in position, under pressure, until the cement has hardened. Wipe the surplus off first.

Carefully mark the position of the small shells on the larger by scratching round with a sharp-pointed tool. The shells will not, at this stage, be cemented to the large shell but the modelling paste will have been moulded into a surface that conforms exactly with the places on the large shell. They can then be finally cemented with Tiluma.

Another way (Fig. 10) is to get a slab of wood and very roughly cut a hole in it to take the shell. Putty is used to fill up gaps. Another way is to lay the scallop shell face down on a sheet of glass. Where it does not make perfect contact with the glass, use plasticine to fill gaps. Build a fence of cardboard round the reversed shell and seal this well, also, with plasticine. Now pour in plaster to a depth of, say, 1in. When the plaster has set the shell can be turned right way up. It will be firmly and accurately embedded in a block of plaster. (153)

GARDEN GATE NAME PLATES IN WOOD

WE usually think of fretwork as a form of indoor decoration, but it can also be used to provide ornamental features in the garden. For example the illustration at Fig. 1 shows an interesting name plate for the garden gate. The design was cut out in fretwood and glued on to the front of the gate. Before being fixed into position it was painted with enamel in a colour to contrast with that of the gate.

An even more distinctive effect is

shown in Fig. 2. This takes the form of a hanging sign which was cut out from a sheet of asbestos with the aid of a fretsaw, using a medium grade blade.

The design is an attractive one which could be adapted to suit any house by simply altering the lettering as necessary. When completed the sign should be given a coat of black enamel and hung up after the manner shown.

Fig. 3 illustrates another novel idea. It is a sort of sign post which could be fixed by the garden gate pointing up the path towards the house. The ornamental bird was copied from a Hobbies fretwork

design and cut out in outline. The details of eyes and feathers were merely painted in with white paint. (162)



Fig. 1—Distinctive design for door or gate



Fig. 3—Original type of garden sign



Fig. 2—An attractive hanging nameplate

A simple, novel, attractive, and practical article— A COTTON REEL LAMP

MANY cotton reels are far too well made and of too nice wood to throw away, and so it is good to hear of items that can be quite satisfactorily made with them. Looking round there are really a lot of things in which reels can be introduced and the table lamp shown in the illustration—made by the writer—is one of them.

There was some question at first as to whether reels would look well as the stem of a lamp which comes under close scrutiny, but there need have been no worry on this score, for the effect is very good—indeed, better than suggested in the photograph.

A Suitable Height

Height was another of the initial questions when thinking out the design, but it seemed that eight or nine reels fitted one on the other brought the bulb to about the right elevation above the table for comfortable reading. There is no reason, however, why a shorter stem should not be used, as, say, for a bedside lamp, when it is, perhaps, better to keep the light low.

Having decided the height, the first thing is to get together the desired number of reels—of the same diameter, design and colour of wood. It is worth going to some trouble to get matching reels, for while reels may look the same

on the point of fitting a quite strong thread can be forced into its sides by rotating the socket, at the same time keeping a steady pressure downwards. Fig. 2 shows the socket in position. A perfectly firm joint can be made this way.

Essential Fitting

It is, of course, essential that this joint must be rigid as it has to take the weight of the holder, bulb and shade, plus the metal frame for the shade. An amazingly tight connection can be secured, however, as proved by the lamp shown which has been doing good service for over a year.

Should the hole become too big while scraping it out, it is best to discard the reel and start on another. In getting a sound thread in the wood the secret is to keep the sides of the hole parallel—any tapering is fatal.

The reels can now be fastened together, this being done with strong tube glue. Glasspaper the ends first and then heat the extremities to be joined. Rub on the glue, heat again, and bring the surfaces in contact. Once touching, never break and reset. A glue joint made this way is virtually as strong as continuous wood.

The Base

Next comes the base. This can be any square of good material of 6in. or 7in. sides and of about 1in. thickness. Cut off the corners to give a neat effect and take a hole down the centre of about $\frac{1}{2}$ in. diameter, and from this cut a channel to one of the edges, deep enough to take two strands of electric flex. The lamp in the illustration has a piece of mahogany for the base—taken from the bottom of a discarded bedroom looking-glass. This smoothed and with a coat of french polish looks really very attractive.

When the reels are dry, the whole stem is attached to the base, also with glue. Make sure that the reels stand at a true right angle. Given that the bottom reel is not faulty they will do this automatically, but just give an eye to the point.

With everything tightly together apply the finish. The reels are first given a good rubbing with a dark brown boot-polish. Everything is then treated with French polish—or the reels can be left as they are, just stained with the boot preparation.

Now attach the ends of the flex to the socket and feed the length down the centre of the reels. Screw the socket

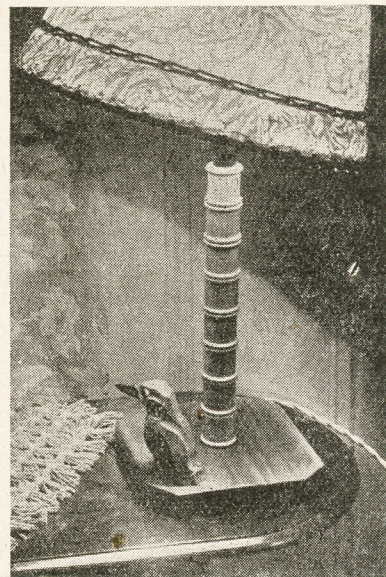


Fig. 1—A delightful stand lamp in use

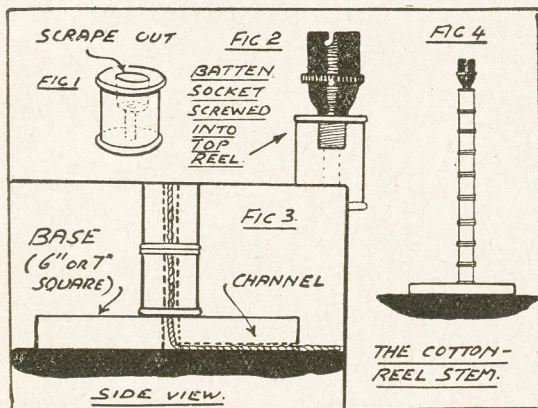
tightly into position and give the flex a pull to make sure it is lying nicely inside and then pull the wire to one side along the underside channel and secure it here with one or two electric cable staples.

Baize Under Base

Finally finish the bottom of the base with a piece of baize. This both covers the channel containing the flex and allows the lamp to stand on polished furniture without doing any harm. Also it looks nice and gives the whole lamp a well-finished appearance.

On the socket go the shade frame and shade. These are, of course, standard articles which can be obtained at any chain store. The socket should contain a switch, but if desired a plain socket can be used and a torpedo switch let into one of the leads.

The shade can, of course, be to personal choice but one of about 1ft. bottom diameter gives a nice effect of 'balance'—a thing which is rather important in lamps of this kind, but often overlooked. Both a too small and too large shade can spoil the whole effect.



there is often some trifling difference which becomes very obvious when a series are put together.

Lamp Fitting

Next purchase a batten electric lamp socket, that is one with an externally threaded lower section, and then selecting the reel which is to go on top of the stem, enlarge the central hole as Fig. 1, in the diagram. The aim is to make this just large enough to take the threaded end of the socket which is screwed in there, producing its own thread. Reels are normally of hard wood, some exceedingly hard, and if the hole is gently scraped out till the socket is just

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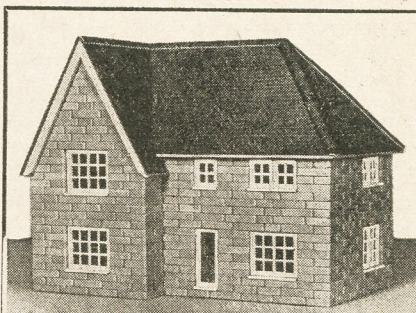
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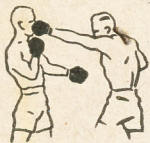
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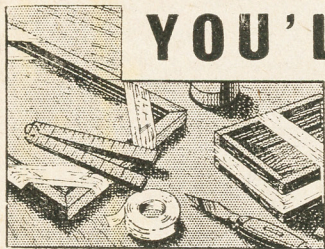
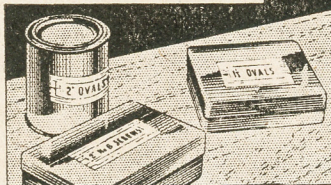


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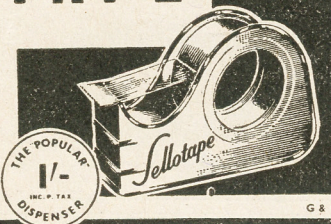
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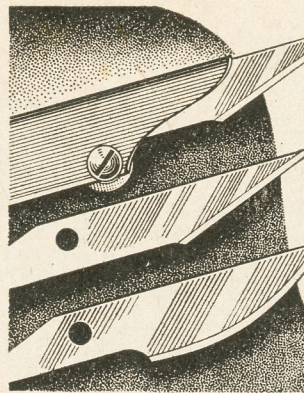
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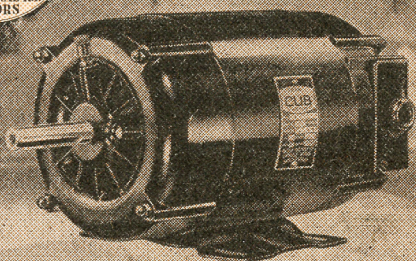
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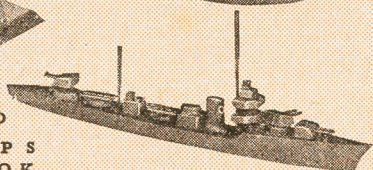
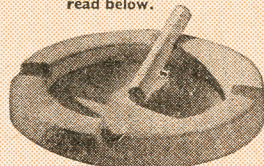
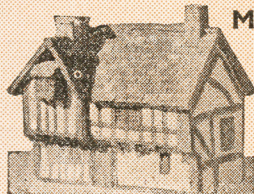
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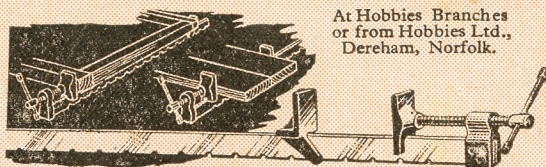
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